



WPH-N

Woltman meter with parallel turbine shaft

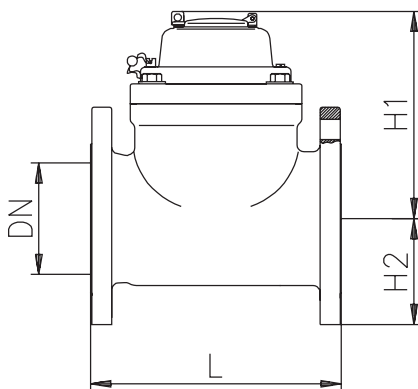
Woltman Parallel type meters are always used when high flow rates with a relative constant flow rate profile are to be measured. Through its robust construction they not only are capable of covering a large measuring range, but the measuring accuracy is also long-term stable.

The hydrodynamic optimized turbine is reliably operated already at small flow rates and “upwards” it has enough power reserves to reliably measure flow rate peaks. Especially strong bearings with low friction guarantee a long life of the meter.

Reed sensors, optical and inductive-NAMUR sensors can always be retrofitted without damaging the calibration seal. Then the meter can be integrated with data communication or automation and control systems in a simple and flexible way.

Performance characteristics in overview

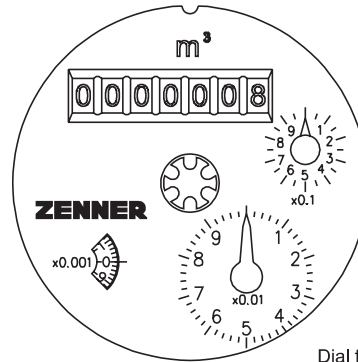
- Low starting flow, high overload security
- Wide measuring range
- Removable measuring insert
- Low head loss
- Hydraulic bearing relieve for long-term measuring stability
- Retrofittable with active and passive pulsers
- Metal protective cover serially, plastic optional
- Evacuated counter protected from condensation
- Dry dial counter with large number rollers simplifies the readability
- For cold water up to 30°C, with security up to 50°C
- For horizontal, vertical and inclined installation positions
- High pressure model PN25/40 upon request



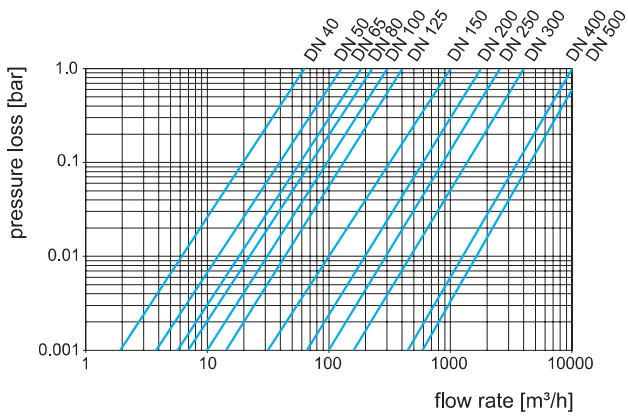
Dimensions WPH-N

Technical data WPH-N								
Nominal flow	Qn	m ³ /h	15	15	25	40	60	100
Nominal diameter	DN	mm	40	50	65	80	100	125
Overall length	L	mm	200	200	200	225	250	250
Metrological class			B	B	B	B	B	B
Maximum flow (short-term)	Qmax	m ³ /h	60	90	120	150	250	300
Maximum flow (constant)		m ³ /h	30	45	60	90	125	170
Minimum flow	Qmin	m ³ /h	0,35	0,35	0,45	0,8	1,5	3
Flow rate with 0.1 bar head loss		m ³ /h	20	30	50	70	100	150
Head loss at Qmax		bar	0,2	0,1	0,1	0,2	0,2	0,2
Display range	min	l	2	2	2	2	2	2
	max	m ³	9.999.999	9.999.999	9.999.999	9.999.999	9.999.999	9.999.999
Maximum temperature		°C	50	50	50	50	50	50
Operating pressure, max.	PN	bar	16	16	16	16	16	16
Height	H	mm	206	200	208	255	275	290
Flange diameter	D	mm	150	165	185	200	220	250

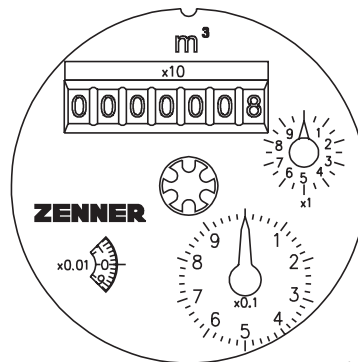
Technical data WPH-N								
Nominal flow	Qn	m ³ /h	150	250	400	600	1000	1500
Nominal diameter	DN	mm	150	200	250	300	400	500
Overall length	L	mm	300	350	450	500	600	800
Metrological class			B	B	B	B	B	B
Maximum flow (short-term)	Qmax	m ³ /h	350	650	1200	1500	2500	4000
Maximum flow (constant)		m ³ /h	250	325	600	700	1250	2000
Minimum flow	Qmin	m ³ /h	3,5	6,5	12	18	30	45
Flow rate with 0.1 bar head loss		m ³ /h	200	650	1000	1500	2500	4000
Head loss at Qmax		bar	0,2	0,05	0,05	0,05	0,05	0,05
Display range	min	l	20	20	20	20	200	200
	max	m ³	9.999.999	9.999.999	9.999.999	99.999.999	99.999.999	99.999.999
Maximum temperature		°C	50	50	50	50	50	50
Operating pressure, max.	PN	bar	16	16	16	16	16	16
Height	H	mm	305	375	470	495	635	740



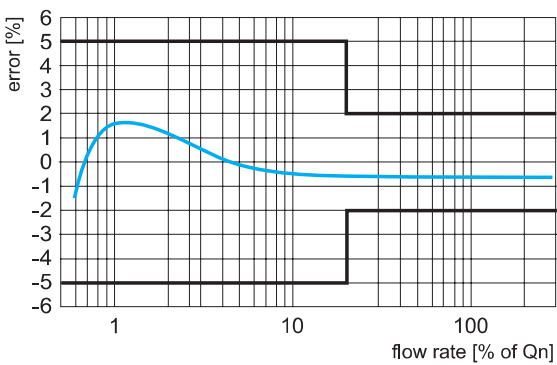
Dial from DN 40 to DN 125



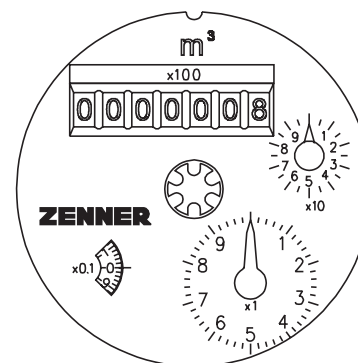
Head loss curves



Dial from DN 150 to DN 300



Typical accuracy curve



Dial DN 400 and DN 500

Installation of Woltman meters

The best measuring results can be achieved with all Woltman meters if some simple but important installation rules are followed. The instructions and engineering rules according to the calibration regulations serve as a basis, in particular the documents PTB-A6.1, PTB-A6.2 and the DIN 1988.

Woltman meters are by construction sensitive to the incident flow profile. Tee pieces or gate valves that are not completely opened within close proximity to the meter, effectively influence the measuring result.

Exemplary the most important installation rules:

- Woltman meters must be operated in the correct flow direction
- There must be a minimum of 3 x DN of straight pipe section for WPH type upstream of the meter
- There must be a minimum of 5 x DN of straight pipe section for WS type upstream of the meter
- If a sufficient straight pipe section is not possible, then a honeycomb flow straightener should be installed
- Ideally a straight pipe section of at least 2 x DN is present downstream of the meter
- To avoid air pockets in the meter, it should not be installed on the highest point of the piping
- Gate valves or other shut-off valves in front of the meter should be completely opened during operation

Installation positions

WPH type Woltman meters can be installed horizontally or vertically, that is in horizontal or in perpendicular pipelines; the counter either is facing upwards or is tilted 90° to the side.

Type WS and WPV Woltman meters can only be mounted horizontally, that means only in horizontal pipelines with the counter facing upwards.

The overhead installation is not permitted for any meter type.

Complete installation instructions can be found on www.zenner.com.

